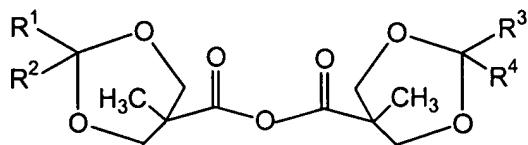


**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings of claims in the application:

**Listing of Claims:**

**Claim 1.** (Previously presented) An anhydride having the structure:



wherein,

R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, and R<sup>4</sup> are members independently selected from substituted or unsubstituted alkyl, substituted or unsubstituted heteroalkyl and substituted or unsubstituted aryl.

**Claim 2.** (Previously presented) The anhydride according to claim 1, wherein each of R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, and R<sup>4</sup> is an independently selected C<sub>1</sub>-C<sub>6</sub> unsubstituted alkyl group.

**Claim 3.** (Currently amended) The anhydride according to claim 2, wherein said unsubstituted alkyl group is a member selected from the group consisting of methyl, ethyl and propyl.

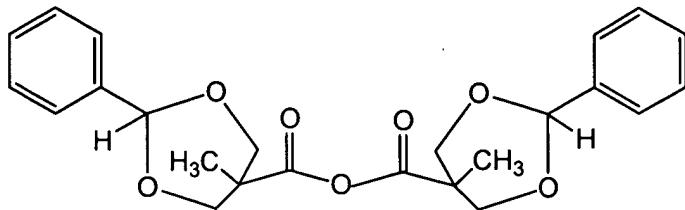
**Claim 4.** (Previously presented) The anhydride according to claim 1, wherein said anhydride is a solid, which is substantially free of coupling reagent derived side products.

**Claim 5.** (Currently amended) The anhydride compound according to claim 1, prepared by a method consisting essentially of:

- (a) combining benzylidene-2,2-bis(methoxy)propanoic acid, N,N'-dicyclohexylcarbodiimide and an organic solvent, thereby forming a reaction mixture in which said anhydride is formed;
- (b) filtering said reaction mixture, thereby removing precipitated dicyclohexylurea from said reaction mixture;

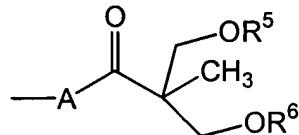
(c) precipitating said anhydride from said reaction mixture by contacting said reaction mixture with a hydrocarbon solvent, thereby producing said anhydride.

**Claim 6.** (Previously presented) An anhydride having the structure:



**Claim 7.** (Previously presented) The anhydride according to claim 6, wherein said anhydride is a solid and is substantially free of coupling reagent derived side products.

**Claim 8.** (Currently amended) A dendrimer which is substantially free of urea side products, said dendrimer comprising a subunit having the structure:

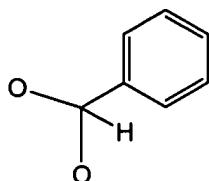


wherein,

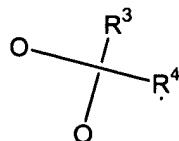
A is an active group, which is a member selected from NH, S and O;

R<sup>5</sup> and R<sup>6</sup> are members independently selected from the group consisting of H, diagnostic agents, therapeutic agents, analytical agents, and moieties comprising a reactive group or, alternatively

wherein R<sup>5</sup> and R<sup>6</sup> together with the oxygen atoms to which they are attached  
optionally form a structure which is a member selected from the group  
consisting of:



; and



**Claim 9.** (Previously presented) The dendrimer according to claim 8, wherein A is a component of a polymer.

**Claim 10.** (Previously presented) The dendrimer according to claim 9, wherein said polymer is a member selected from the group consisting of nucleic acids, linear poly(alkylene oxides), star poly(alkylene oxides), polysaccharides, poly(amino acids) and poly(hydroxystyrene).

**Claim 11.** (Currently amended) The dendrimer according to claim 10 [[8]], wherein said polysaccharide is a member selected from cyclodextrin, starch, hydroxyethyl starch and dextran.

**Claim 12.** (Currently amended) The dendrimer according to claim 10 [[8]], wherein said poly(amino acid) comprises lysine, tyrosine, serine, cysteine, arginine, histidine and combinations thereof.

**Claim 13.** (Currently amended) The dendrimer according to claim 9 [[7]], wherein said polymer is a synthetic organic polymer with pendant NH groups, OH groups, SH groups and combinations thereof.

**Claim 14.** (Currently amended) The dendrimer according to claim 13 [[11]], wherein said synthetic organic polymer is a member selected from poly(vinylphenol), poly(hydroxymethacrylate), poly(N-2-hydroxypropylmethacrylamide), poly(diallylamine), poly(lactic acid) and poly(hydroxymethylcaprolactone), poly(4-hydroxyethylcaprolactone).

**Claim 15.** (Currently amended) The dendrimer according to claim 8 [[6]], wherein said therapeutic agent is a member selected from the group consisting of antiproliferative agents, proteins, anti-cancer chemotherapeutic agents, antibiotics, antivirals, and antiparasitics.

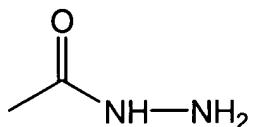
**Claim 16.** (Currently amended) The dendrimer according to claim 8 [[6]], wherein said diagnostic agent is a member selected from MRI contrast agents, X-ray contrast agents, CT contrast agents, PET contrast agents, ultrasonography contrast agents, fluorescent agents, chromophoric agents and radioisotopes.

**Claim 17.** (Previously presented) The dendrimer according to claim **8**, wherein said subunit repeats from 2 to 100 times.

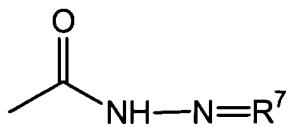
**Claim 18.** (Previously presented) The dendrimer according to claim **17**, wherein said subunit repeats from 4 to 50 times.

**Claim 19.** (Previously presented) The dendrimer according to claim **18**, wherein said subunit repeats from 8 to 24 times.

**Claim 20.** (Currently amended) A dendrimer according to claim 8 [[6]], wherein at least one of R<sup>5</sup> and R<sup>6</sup> has the structure:



**Claim 21.** (Currently amended) A dendrimer according to claim 8 [[6]], wherein at least one of R<sup>5</sup> and R<sup>6</sup> has the structure:

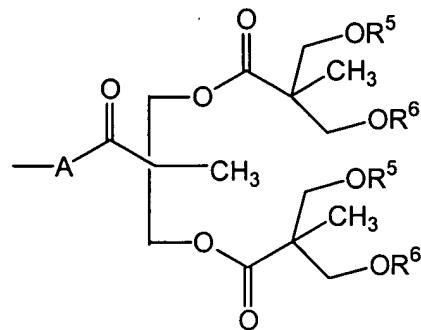


wherein, R<sup>7</sup> is a member selected from the group consisting of diagnostic agents, therapeutic agents and analytical agents.

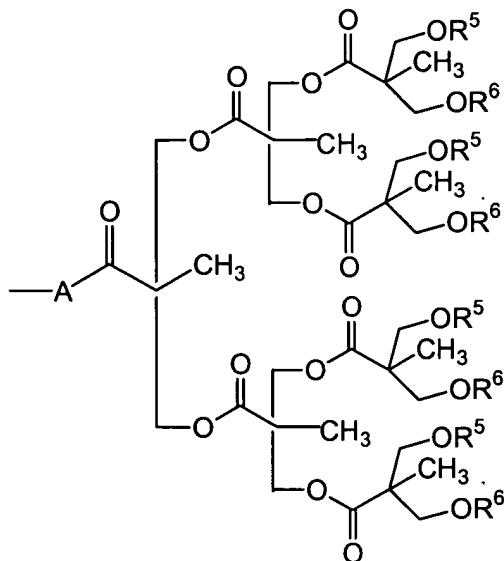
**Claim 22.** (Currently amended) A dendrimer according to claim 21 [[19]], wherein R<sup>7</sup> is a doxorubicin derivative.

**Claim 23.** (Currently amended) A pharmaceutical formulation comprising a dendrimer according to claim 8 [[6]] and a pharmaceutically acceptable carrier.

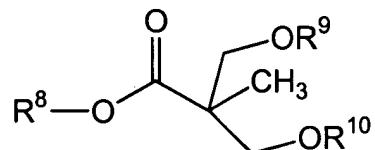
**Claim 24.** (Previously presented) A dendrimer comprising a subunit having the structure:



**Claim 25.** (Previously presented) A dendrimer comprising a subunit having the structure:



**Claim 26.** (Previously presented) A dendrimer having the structure:



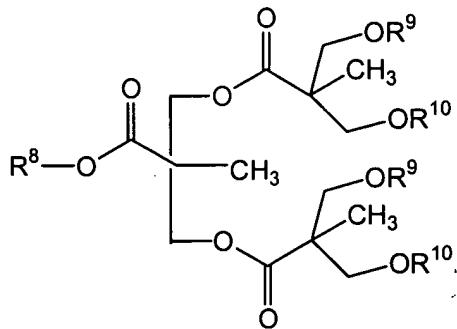
wherein,

R<sup>8</sup> is a nucleic acid; and

$R^9$  and  $R^{10}$  are members independently selected from H and a poly(ethylene oxide) residue.

**Claim 27.** (Currently amended) The dendrimer according to claim 26 [[24]], said dendrimer being substantially free of urea side products.

**Claim 28.** (Previously presented) A dendrimer comprising the structure:



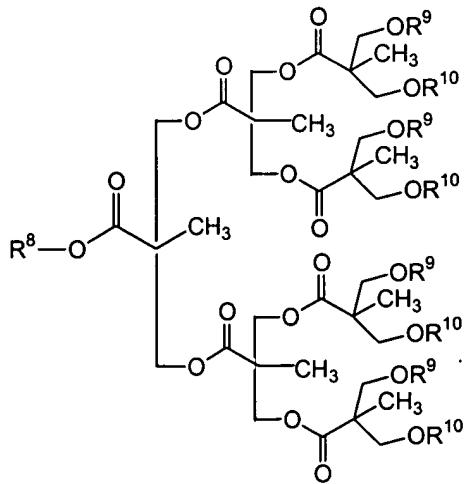
wherein,

$R^8$  is a nucleic acid; and

$R^9$  and  $R^{10}$  are members independently selected from H and a poly(ethylene oxide) residue.

**Claim 29.** (Currently amended) The dendrimer according to claim 28 [[26]], said dendrimer being substantially free of urea side products.

**Claim 30.** (Previously presented) A dendrimer comprising the structure:



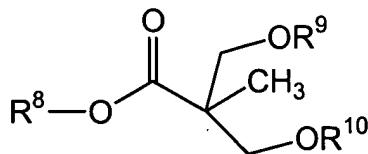
wherein,

$R^8$  is a nucleic acid; and

$R^9$  and  $R^{10}$  are members independently selected from H and a poly(ethylene oxide) residue.

**Claim 31.** (Currently amended) The dendrimer according to claim 30 [[28]], said dendrimer being substantially free of urea side products.

**Claim 32.** (Previously presented) A biological compartment comprising a membrane defining an interior space, said interior space comprising a dendrimer comprising a subunit having the structure:

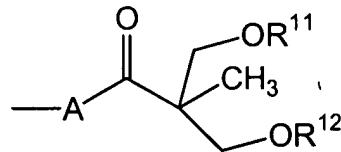


wherein,

$R^8$  is a nucleic acid; and

$R^9$  and  $R^{10}$  are members independently selected from H and a poly(ethylene oxide) residue.

**Claim 33.** (Previously presented) A biological compartment comprising a membrane defining an interior space, said interior space comprising a dendrimer comprising a subunit having the structure:



wherein,

$A$  is a residue of an active group; and

$R^{11}$  and  $R^{12}$  are members independently selected from the group consisting of H, therapeutic agents and diagnostic agents.

**Claim 34.** (Currently amended) The biological compartment according to claim 33 [[31]], wherein said therapeutic agent is a member selected from the group consisting of antiproliferative agents, proteins, anti-cancer chemotherapeutic agents, antibiotics, antivirals, nucleic acids, and antiparasitics.

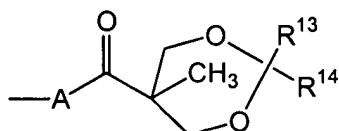
**Claim 35.** (Currently amended) The biological compartment according to claim 33 [[31]], wherein said diagnostic agent is a member selected from MRI contrast agents, X-ray contrast agents, CT contrast agents, PET contrast agents, ultrasonography contrast agents, nucleic acids, fluorescent probes, chromophoric probes and radioisotopes.

**Claim 36.** (Currently amended) The biological compartment according to claim 33 [[31]], wherein A is a residue of a core moiety, and said core moiety is a poly(alkylene oxide) residue.

**Claim 37.** (Previously presented) The biological compartment according to claim 36, wherein said core moiety is a poly(ethylene oxide) residue.

**Claim 38.** (Currently amended) The biological compartment according to claim 33 [[31]], wherein said biological compartment is a member selected from cells and organelles.

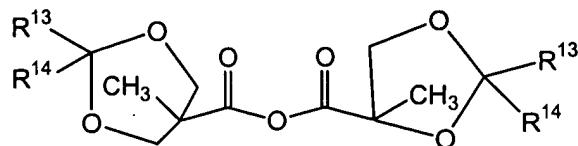
**Claim 39.** (Previously presented) A method of producing a protected first generation dendrimer substantially free of urea side products, said dendrimer comprising a subunit having the structure:



wherein,

A is an active group residue selected from NH, O and S on a core moiety; and R<sup>13</sup> and R<sup>14</sup> are components of a diol protecting group and are members independently selected from H, substituted or unsubstituted alkyl, substituted or unsubstituted heteroalkyl and substituted or unsubstituted aryl, with the proviso that when R<sup>13</sup> is H, R<sup>14</sup> is other than H; said method comprising:

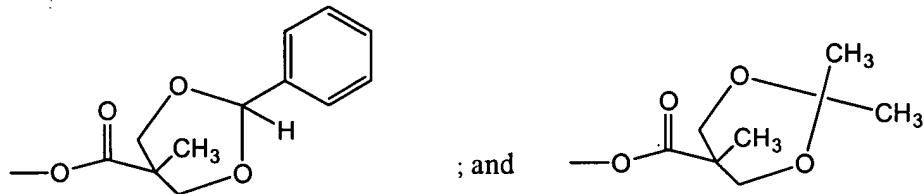
(a) forming a reaction mixture by contacting a core moiety comprising A with an acylating group in an organic solvent, said acylating group having the structure:



thereby acylating A, forming said dendrimer; and

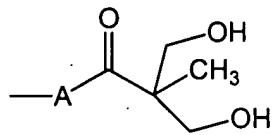
(b) extracting said reaction mixture with an aqueous solution, thereby removing impurities.

**Claim 40.** (Currently amended) The method according to claim 39 [[37]], wherein said subunit is a member selected from the group consisting of:



**Claim 41.** (Previously presented) The method according to claim 39, further comprising:

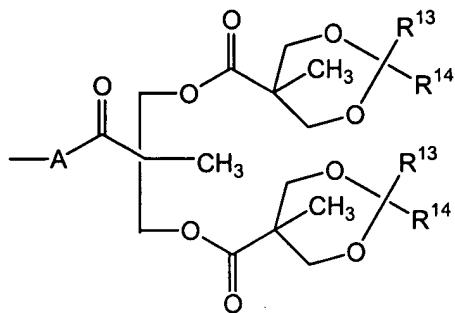
(c) removing said diol protecting group, thereby forming a first generation dendrimer comprising a subunit having the structure:



**Claim 42.** (Currently amended) A dendrimer prepared by the method according to claim 41 [[39]].

**Claim 43.** (Currently amended) The dendrimer according to claim 42 [[40]], wherein said dendrimer is a solid.

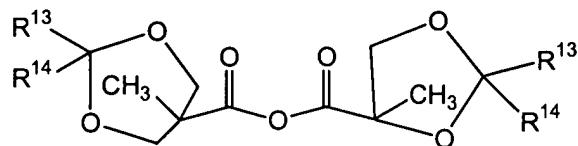
**Claim 44.** (Currently amended) A method of producing a protected second generation dendrimer substantially free of urea side products, said dendrimer comprising a subunit having the structure:



wherein,

A is an active group selected from NH, O and S on a core moiety; and  
 $R^{13}$  and  $R^{14}$  are components of a diol protecting group and are members independently selected from H, substituted or unsubstituted alkyl, substituted or unsubstituted heteroalkyl and substituted or unsubstituted aryl, with the proviso that when  $R^{13}$  is H,  $R^{14}$  is other than H;  
said method comprising:

(a) contacting said first generation dendrimer according to claim 41 ([39]) with an acylating group having the structure:

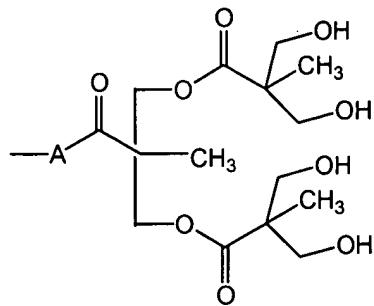


thereby acylating A, forming said dendrimer; and

(b) extracting said reaction mixture with an aqueous solution, thereby removing impurities.

**Claim 45.** (Previously presented) The method according to claim 44, further comprising:

(c) removing said diol protecting group, thereby forming a second generation dendrimer comprising a subunit having the structure:



**Claim 46.** (Previously presented) A dendrimer prepared by the method according to claim 44.

**Claim 47.** (Currently amended) ~~A dendrimer prepared by the method according to claim 44,~~  
The dendrimer according to claim 46, wherein said dendrimer is a solid.

**Claim 48.** (Previously presented) A method of enhancing water solubility of an agent, said method comprising forming a conjugate between said agent and a dendrimer comprising a subunit having the structure:

